

PAT400 series

Portable appliance testers



- **10,000 memory storage with USB download**
- **Large 5.7" 1/4 VGA backlit full colour screen for clear results**
- **200 mA; 10 A and 25 A Bond Test with high duty cycle for repetitive testing**
- **Selectable PASS/FAIL limits provide instant indication of a faulty asset**
- **Optional barcode scanner and printer available to save time typing asset IDs**
- **230 V and 110 V operation for industrial, commercial and residential applications**

DESCRIPTION

The PAT400 series from Megger is a new generation of downloading portable appliance testers, fully testing portable electrical equipment to the latest edition of the Code of Practice for the In-Service Inspection and Testing of Electrical Equipment. The PAT420 provides the same extensive memory and downloading capability and has the added features of 110 V operation and also 10 A and 25 A earth bond testing. All products in the range have a high duty-cycle, with the design tailored to fast testing, easy operation and all-day use. The PAT400s feature a unique fast-re-start, so that when moving the tester from one room to another, it re-starts instantly from the same menu where it was unplugged. This is a significant timesaver, so allowing more tests per day.

USB communication provides convenient download to a standard USB memory stick and an on-board 10,000 record memory provides interruption-free testing for improved efficiency, with a large QWERTY keypad for fast data entry. Data is directly compatible with Megger PowerSuite® software for professional certification. All products have the option of a barcode scanner and a thermal transfer barcode label printer operating directly from the USB port. Thermal transfer labels are highly resistant, stable and easily available. The PAT420 has dual 230 V and 110 V operation for complete industrial, commercial and residential applications.

5 soft-keys give direct access to frequently used functions, accelerating navigation through menus and therefore increasing productivity, where time is money. Both standard and customer configurable test groups are available for fast, flexible asset testing. Tests available in the range include 250 V and 500 V insulation tests, 200 mA, 10 A and 25 A earth bond tests, differential, touch and alternative (substitute) leakage tests, operational VA tests, RCD trip-tests for portable RCDs, anti-surge, RCD protected extension leads and power cords. RCD testing is now a requirement of the UK Code of Practice.

Accessories supplied with all models include a combined earthbond and insulation test lead, an adaptor for testing 230 V extension leads, a laptop power supply adaptor and a carry-case for convenient product and lead storage. All instruments also include Download Manager software, enabling data to be converted into a CSV format which can be read directly on a PC using Microsoft® Excel.

Megger PowerSuite software can be purchased to compliment any PAT400, providing full databased asset management and professional electronic certificate generation, providing options for multiple clients and locations.

APPLICATION

There is a legal requirement for any landlord, employer or owner of a place of work or public place, to ensure that all electrical equipment accessible by tenants, employees or the public is maintained in a safe condition, an acceptable method of ensuring this is by routine electrical testing. This electrical testing can be performed by electrical contractors, specialist PAT testing organisations, maintenance departments or facilities management companies.

The PAT400 range is suitable for performing portable appliance testing in multiple locations. For example: hotels, public houses, schools, colleges, nurseries, shops, offices, theatres, banks, restaurants, cafés, sports/leisure facilities, cinemas, factories, hair salons, etc. Places where high volume testing requires that accurate records are kept which may be difficult to maintain, but aided by PAT400's on-board memory and download to management software, record keeping becomes easily managed.

| PAT420 | |
|----------------------------------|---|
| SUPPLY | |
| 230 V | ▪ |
| Supply measurement | ▪ |
| EARTH BOND/CONTINUITY | |
| 200 mA | ▪ |
| 10 A | ▪ |
| 25 A | ▪ |
| Bond lead null | ▪ |
| INSULATION TEST | |
| 250 V | ▪ |
| 500 V | ▪ |
| ALTERNATIVE LEAKAGE TESTS | |
| Substitute | ▪ |
| Differential | ▪ |
| Touch current | ▪ |
| OPERATION TEST | |
| VA Measurement | ▪ |
| EXTENSION LEAD TEST | |
| Earth bond | ▪ |
| Insulation | ▪ |
| Polarity | ▪ |
| Portable RCD test | ▪ |
| OTHER FEATURES | |
| Auto test routine | ▪ |
| Manual testing | ▪ |
| Fuse check | ▪ |
| Colour display | ▪ |
| Configurable tests times | ▪ |
| Selectable pass limits | ▪ |
| Lead storage pouch | ▪ |
| 10,000 record on-board storage | ▪ |
| Download to USB memory stick | ▪ |
| PowerSuite compatible | ▪ |

SPECIFICATIONS

Electrical supply range

230 V $\pm 10\%$ ± 1 V @ 50 Hz $\pm 10\%$ ± 0.1 Hz
Instrument accuracy cannot be guaranteed when operated on supply frequencies other than those specified above

Bond test

(10 A and 25 A) (not PAT410)

Open circuit voltage: 9 V ac $\pm 10\%$ ± 0.1 V
(Supply: 230 V 50Hz)

Earth bond resistance accuracy:

$\pm 5\%$ ± 3 digits (0 to 0.49 Ω)
 $\pm 5\%$ ± 5 digits (0.5 to 1.99 Ω)

Earth bond resistance resolution:

10 m Ω (0 to 1.99 Ω)

Display range: 0 to 1.99 Ω

Continuity (200mA)

Continuity test voltage: 4.0 V dc -0% +10%

Continuity resistance accuracy:

$\pm 5\%$ ± 3 digits (0 to 0.49 Ω)
 $\pm 5\%$ ± 5 digits (0.5 to 19.99 Ω)

Continuity resistance resolution:

10 m Ω (1 to 19.99 Ω)

Display range: 0 to 19.99 Ω

Insulation test (250 V and 500 V)

Insulation resistance accuracy:

$\pm 2\%$ ± 5 digits (0 to 19.99 M Ω)
 $\pm 5\%$ ± 10 digits (20 to 99.99 M Ω)

Insulation resistance resolution:

0.01 M Ω

Display range: 0 to 99.99 M Ω

Substitute leakage current

Test voltage and frequency:

40 V ac $\pm 10\%$
nominal mains frequency

Leakage current accuracy:

$\pm 5\%$ ± 5 digits

Leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Leakage current

Test voltage and frequency:

Nominal mains supply

Differential leakage current accuracy:

$\pm 5\%$ ± 5 digits

Differential leakage current resolution:

0.01 mA

Display range: 0 to 19.99 mA

Touch current test

Test voltage and frequency:

Nominal mains supply

Touch current accuracy: $\pm 5\%$ ± 5 digits

Touch current resolution:

0.01 mA

Display: 0.00 to 10 mA

Operational test

Test voltage and frequency:

Nominal mains supply

VA accuracy:

±5% ±10 digits (0 - 99 VA)
±5% ±50 digits (100 VA - 999 VA)
±5% ±100 digits (1000 VA - 3700 VA)

Resolution:

1 VA (0 to 3700 VA)

Display range:

0 to 3.99 KVA

Ext Lead Test

Tests performed:

Bond, insulation and polarity

Polarity test voltage:

12 V dc

Polarity checks:

Lead OK
Live neutral S/C
Live neutral reversed
Live/neutral O/C

RCD tests

Test voltage and frequency:

Nominal mains supply

Test current accuracy:

-8% to -2% (1/2 x I)
+2% to +8% (1 x I, 5 x I)

Trip time accuracy:

±1% ±5 digits

Trip time resolution:

0.1 ms

Display range:

0 to 1999 ms (1/2 x I)
0 to 300 ms (1 x I)
0 to 40 ms (5 x I)

Fuse Test

Test voltage:

3.3 V

Warning:

Audible beep if fuse is OK

ENVIRONMENTAL SPECIFICATION

Operating temperature range and humidity:

-10 to +50 °C
90% RH @ -10 to +30 °C
75% RH @ +30 to +50 °C

Storage temperature range and humidity:

-20 to +60 °C
90% RH @ -10 to +30 °C
75% RH @ +30 to +50 °C

Maximum altitude:

2000 m

IP rating:

IP40

Weight (with packaging)

PAT420 4,4 kg (4,9 kg)

Dimensions

PAT420 155 (H) x 255 (B) x 320 (L)

Dimensions (instrument and packaging)

210 (H) x 280 (W) x 390 (L)

Safety

IEC 61010-1: CAT II 300V

EMC

IEC 61326-1: 2006
IEC 61326-2-2: 2005

ORDERING INFORMATION

| Description | Part number |
|---|-------------|
| PAT420-IN | 1010-727 |
| Included accessories | |
| Printed quick start guide | |
| Full user guide on CD | |
| Calibration Certificate | 1001-284 |
| Continuity/earth bond lead | 1001-233 |
| Extension lead adaptor BS1363 | 1001-234 |
| Flash test lead | 1007-165 |
| Carry case with lead/document pouch | 2000-962 |
| Plug adaptor IEC C6 - C13 | 1001-232 |
| Optional accessories | |
| UKAS certificate | 1001-285 |
| 110 V Extension lead adaptor | 6220-639 |
| 110 V mains lead adaptor | 1000-766 |
| 415 V adaptor lead (4-pin) to BS1363 (16 A) | 1000-767 |
| 415 V adaptor lead (5 pin) to BS1363 (16 A) | 1000-770 |
| Barcode reader, USB | 1001-047 |
| Barcode Label Printer (Brother P700) (USB) | 1005-423 |
| USB cable | 1004-610 |
| Barcode printer label refills (cartridge) | 90001-010 |
| Appliance bar-code labels (1-1000) | 6121-483 |
| Roll of 1000 FAIL test labels | 1001-227 |
| Roll of 1000 PASS test labels | 1000-971 |
| PAT accessory pouch | 2001-044 |
| PAT test certificate book | 1001-299 |
| Screen protector (2) | 1002-572 |

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